Amendments to the Specification

Please replace the paragraph beginning on page 2, line 24, with the following rewritten paragraph:

A1

In accordance with one embodiment of the present invention, a semiconductor die is [thinned] etched by flowing a layer of etchant across an exposed surface of the die from a first edge of the semiconductor die to a second edge of the semiconductor die.

Please replace the paragraph beginning on page 3, line 1, with the following rewritten paragraph:

A2

An apparatus is provided for [thinning] etching a semiconductor die by flowing a layer of etchant over an exposed, inactive surface of the semiconductor die. In one embodiment, the apparatus includes a first member having a support surface for supporting or holding a semiconductor die. The semiconductor die may be disposed within a semiconductor package with the semiconductor package being supported or held by the first member. The apparatus may also include a second member having a first surface disposed adjacent the support surface of the first member such that when a semiconductor die is disposed on the support surface an exposed surface of the semiconductor die is adjacent the first surface of the second member. A channel is formed between the first surface of the second member and the exposed surface of the semiconductor die. An input conduit in fluid communication with one side of the channel provides a supply of etchant to the channel for [flow] flowing across the exposed surface of the semiconductor die. In this configuration, etchant passes through the input conduit and across the exposed surface from one edge of the exposed surface to the other to [thin] etch the semiconductor die. The semiconductor package is double-sealed within the apparatus to limit leakage of fluid, such as acid, from the apparatus.

Please replace the paragraph beginning on page 3, line 16, with the following rewritten paragraph:

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(408) 382-0480
FAX (408) 382-0481

A3

Pursuant to one embodiment, in operation, a semiconductor die having an exposed surface is initially provided. Next, a first acidic solution is flowed across the exposed surface to at least partially remove any oxide formed on the exposed surface. The first acidic solution

may include hydrofluoric acid. Next, an etchant is flowed across the exposed surface from one edge to the other to [thin] etch the semiconductor die. In one embodiment, the etchant comprises a mixture of nitric acid, hydrofluoric acid, and glacial acidic acid. Lastly, a second acidic solution, which may comprise a mixture of hydrofluoric acid and nitric acid, is flowed across the exposed surface of the semiconductor die to at least partially polish the exposed surface of the semiconductor die.

A3 end

Please replace the paragraph beginning on page 6, line 16, with the following rewritten paragraph:

A4

The pump 312 may comprise a pneumatically actuated positive displacement multi-port pump for providing fluids to the etching apparatus 308 via fluid conduit 328, the agitator 310, and the fluid conduit 330. Pursuant to one embodiment, the pump 312 may pump liquid at a rate of about 500 micro-liters/second at a pressure of about 17 psi. In one embodiment, the pump 312 may comprise the pump disclosed in U.S. Patent Application No. 09/540,485 entitled "Multiport Metering Pump" filed March 31, 2000, by Kirk A. Martin, now U.S. Patent 6,350,110, issued February 26, 2002, which is hereby incorporated by reference in its entirety.

Please replace the paragraph beginning on page 7, line 22, with the following rewritten paragraph:

A5

The agitator 310 may operate continuously so that etchant is drawn into the agitator 310 from the pump 312 and then immediately dispensed to the etching apparatus 308. The agitator operates in a manner that is generally asynchronous with the output of the pump 312, thereby creating an oscillating or reciprocating flow of fluid across the surface to be etched, such as the inactive surface 106 of the semiconductor die 102. In this embodiment, the only time the flow across the inactive surface 106 of the semiconductor die 102 is static is at the instant when the flow direction changes. The agitator 310 may have a displacement sufficiently large to produce fluid velocities above 0.7 meters/second across the exposed surface 106 (FIG. 2) of the semiconductor die 102, where the exposed surface 106 has an area of one square centimeter. The agitator 310 may create a flow in one direction that lasts for

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FAX (408) 382-0481

about 400 milli-seconds ~~in one direction~~ and then reverses for another 400 milli-seconds. In one embodiment, this produces an equivalent flow rate of about 90 ml per minute.

Please replace the paragraph beginning on page 10, line 16, with the following rewritten paragraph:

The post 460 is also shown as including a groove 484 formed therein between the shoulders 464 and the 483 and is oriented substantially orthogonal to a longitudinal axis of the post 460 and is sized to accommodate a sealing member 485, such as an O-ring type gasket. The sealing member ~~408~~ 485 may be slightly compressed between the post 460 and the base 404 to provide an effective seal between the post 460 and the base 404 for substantially preventing fluid flow to or from the cavity 477 through the hole 476.

Please replace the paragraph beginning on page 15, line 1, with the following rewritten paragraph:

The valve units 606, 608, 610, 612, 614, and 616 may be configured identical to each other. In one embodiment, the valve units 606, 608, 610, 612, 614, and 616 may be identical to the valve units disclosed in U.S. Patent Application No. 09/540,485 entitled "Multiport Metering Pump" filed March 31, 2000, by Kirk A. Martin, now U.S. Patent 6,350,110, issued February 26, 2002, which is incorporated by reference in its entirety.

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